MS Appeal Brief Patents
PATENT
5002-1083

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Sergio SANTINI et al. Conf. 5939

Application No. 10/559,772 Group 3751

Filed December 7, 2005 Examiner Keegan Ross Gumbs

BALL-POINT PEN WITH MEANS OF PREVENTING INCLINATION OF THE STRAIGHT PORTION OF THE BALL-PRESSING SPRING

APPEAL BRIEF

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

June 20, 2011

MAY IT PLEASE YOUR HONORS:

This is an appeal of the final rejection of Claim 1 as being anticipated by Okamoto et al. (US 5,277,510); and Claims 1, 4, and 8 as being anticipated by Fukushima (US 6,220,774).

(i) Real Party in Interest

The real party in interest in this appeal is the assignee, Premec S.A. of Cadempino, Switzerland.

(ii) Related Appeals and Interferences

None.

(iii) Status of Claims

Claims 2-3, 6-7 were cancelled. Claim 5 is pending but withdrawn.

Claims 1, 4, and 8 are pending and rejected. Claims 1, 4 and 8 were rejected by the Official Action mailed October 21, 2010 (the "Official Action"). The final rejection of claims 1, 4, and 8 is being appealed.

(iv) Status of Amendments

An Amendment After Final Rejection was filed January 19, 2011 to cancel claims 6-7 without prejudice.

The Advisory Action of April 4, 2011 indicated that the After Final Amendment of January 19, 2011 would be entered for purposes of appeal.

(v) Summary of Claimed Subject Matter

The present invention relates ball-point pens which comprise an ink reservoir communicating with a hole connected to the capillary channel of a tip. The ball, when the pen is not writing, is kept pressed against a retaining edge to prevent the ink from escaping. When the pen is used, being pressed against a writing surface, the ball is pressed towards the inside of the tip and, overcoming a spring resistance, is displaced by an amount sufficient to allow the ink to pass (specification page 1; lines 4-22).

When the spring is pressed during writing, a straight portion of the spring may flex, deviating from an initial position coinciding with the longitudinal axis of the pen. This results in a spring force, with a transverse component, being exerted on the ball so that an annular cross section through which the ink flows out is no longer symmetrical with respect to the pen axis, which allows the ink to flow out at a rate greater than the design flow rate.

This causes blotches which appear randomly arranged, creating an unaesthetic effect automatically associated with a poor pen quality. Further, the blotches may not dry rapidly and, if one brushes against the blotches with one's hand, the blotches produce unaesthetic smears and also dirty one's hand. (page 2; lines 12-15).

The present invention provides a solution to this problem, whereby the capillary channel, through which the straight portion of the ball-pressing spring passes, is provided with a narrow section preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis of the pen. Claim 1 is independent.

FIG.2

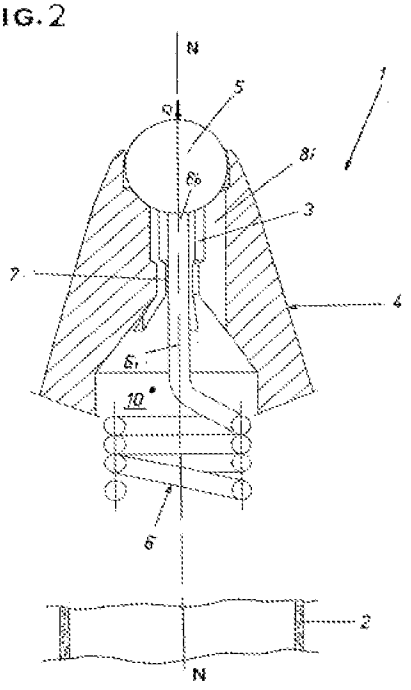
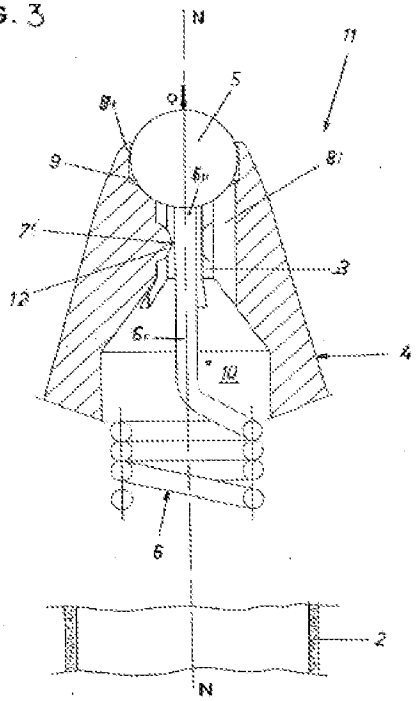


FIG. 3



The claim recites a ball-point pen (Figures 2-3, 1, 11) comprising a tip (4); a capillary channel (3); a hole (10) within the tip and connected to the capillary channel; a reservoir (2) communicating with the hole connected to the capillary channel (3); a ball (5) located with the tip; a cavity (9) which seats the ball, the cavity

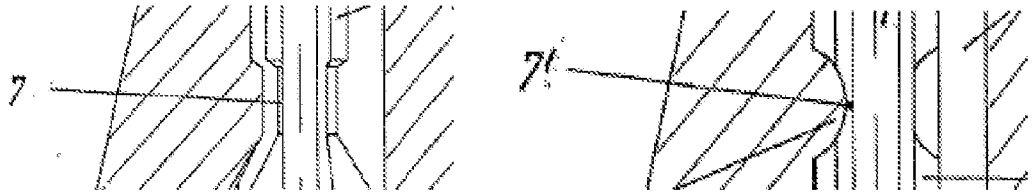
having a retaining edge (9t); a compression-resilient spring (6) extending through the hole and terminating in a straight portion (6r), which straight portion is aligned with the longitudinal axis (N-N) of the pen, the straight portion having a free end (6p) in contact with the ball, the ball kept pressed against the retaining edge of the cavity as a result of the thrust of a compression-resilient spring. See specification page 4, line 6-39).

The invention, in particular, provides a narrow section of a locally radially decreased cross-section (7,7') within the capillary channel coming into contact with the straight portion (6r) of the spring, the narrow section preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis (N-N) of the pen, the narrow section which, being passed through in the axial direction by the straight portion of the spring, is dimensioned such as to contain said straight portion in an approximately complementary manner with a minimum amount of play, substantially preventing said straight portion from assuming inclined positions with respect to the longitudinal axis (N-N). See speciation page 5, lines 1-14.

Claim 1 concludes reciting wherein said straight portion consists of only a single straight portion extending from a distalmost end in contact with the ball towards a

coiled portion of the spring, the entire single straight portion being located on the longitudinal axis of the pen; and a radial through-groove (8i) connecting the cavity seating the ball to hole, the radial through-groove being outside the narrow section containing the straight portion. See page 4, lines 19-27.

Especially see the below excerpt from Figures 2-3.



Attention is directed to the narrow section of the locally radially decreased cross-section (7,7') within the capillary channel coming into contact with the straight portion (6r) of the spring (6), the narrow section (7, 7') preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis (N-N) of the ball-point pen.

Thus, when the spring is pressed during writing, the straight portion (6r) of the spring does not flex or deviate from with the longitudinal axis of the pen, maintaining the annular cross section through which the ink flows symmetrical with respect to the pen axis (N-N), ensuring that the ink to flow out at the design flow rate.

(vi) **Grounds of Rejection to be Reviewed on Appeal**

A first ground of rejection presented for review on appeal is whether claim 1 was properly rejected as being anticipated by Okamoto et al. (US 5,277,510), hereinafter Okamoto.

A second ground of rejection presented for review on appeal is whether claims 1, 4, and 8 were properly rejected as being anticipated by Fukushima (US 6,220,774).

(vii) Arguments

Arguments Concerning the First Ground of Rejection

The Okamoto rejection is improper, as claim 1 is not anticipated by Okamoto.

Okamoto Figures 1-3 are reproduced below.

FIG. 1

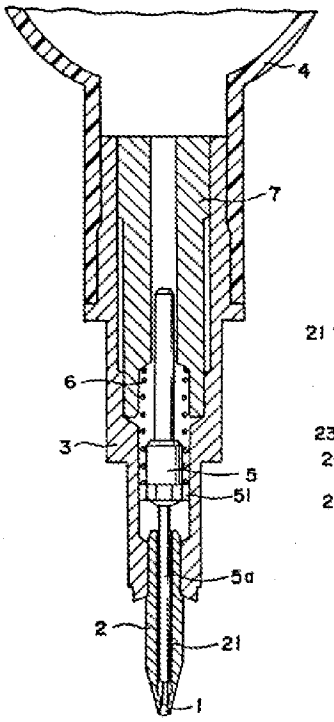


FIG. 2

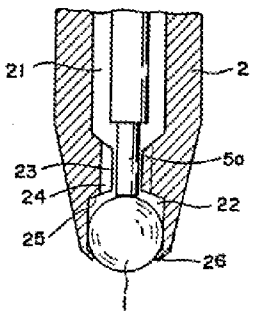
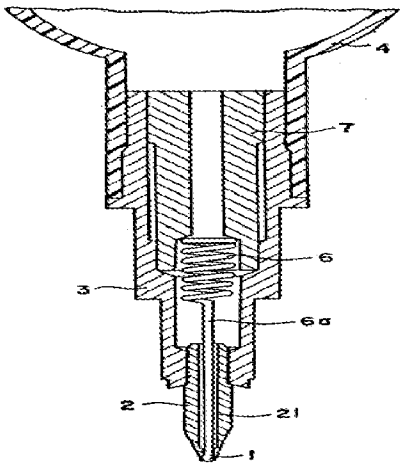


FIG. 3



The Examiner (beginning at Official Action page 2, paragraph 4) states that Okamoto discloses a ball-point pen comprising a tip (2 and 3); a capillary channel (21 and 23) within the tip; a hole ("the hollow interior of element 3; see Fig. 3"); a reservoir (4); a ball (1); a cavity (22) which seats the ball (1) and has a retaining edge (26); a

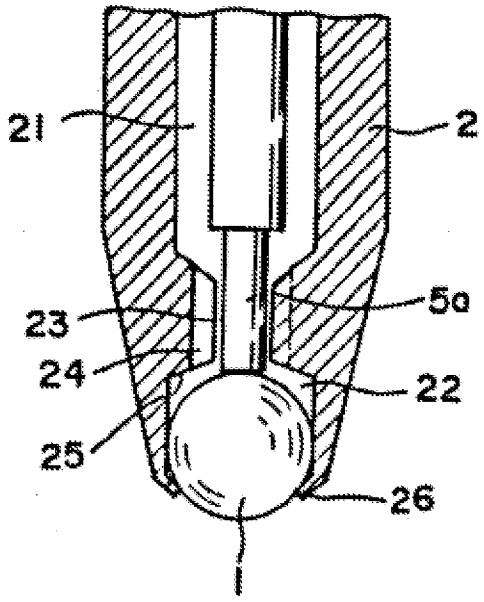
compression-resilient spring (6, 6a) terminating in a straight portion (6a), the straight portion having a free end (the tip of 6a) in contact with the ball.

The Examiner states that there is disclosed "a narrow section of a locally radially decreased cross-section within the capillary channel, coming into contact with the said straight portion (6a) of the spring (6), the narrow section preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis of the ball-point pen (capillary channel 21 and 23 narrows and at narrow section 23 in Fig. 2, through which the straight part 6a of the spring extends, helping prevent the straight portion from becoming inclined. Portion 5a is in very close contact to the narrow portion shown in Fig. 2. The embodiment showed in Fig. 3 is the same as shown in Fig. 1 and 2 with the portions 5, 51 and 5a in Fig. 1 and 2 being replaced with 6a of Fig. 3)."

The Examiner (paragraph spanning pages 3-4 of the Official Action) asserts that "the narrow section which, being passed through in the axial direction by the said straight portion (6a) of the spring (6), is dimensioned such as to contain said straight portion in an approximately complementary manner with a minimum amount of play, substantially preventing said straight portion from assuming

inclined positions with respect to the longitudinal axis, and wherein said straight portion (6a) consists of only a single straight portion extending from a distalmost end in contact with the ball (see Fig. 2) towards a coiled portion (6) of the spring, the entire single straight portion being located on the longitudinal axis of the ball-point pen (see Fig. 3)".

I. This characterization is not accurate, at least to the key features of the present invention. Okamoto discloses a conventional ball pen tip with a housing 2, a ball 1, a cavity 22 (housing the ball), and the capillary hole 23 (not to be confused with the capillary channels 24). Element 21 is the back hole. Element 21 doesn't have any capillary effect, since its diameter is too big.



The rejection offers element 21 as a capillary channel within the tip. This is incorrect as the diameter of 21 is too big for any capillary action.

Thus, the Examiner has improperly analyzed the term "capillary channel".

MPEP § 2111 provides guidance in giving the pending claims their broadest reasonable interpretation consistent with the specification. However, in actually analyzing the claims, the Examiner fails to properly interpret the "capillary channel" term. More specifically, the Examiner gives the meaning of the "capillary channel" term a meaning inconsistent with in the specification.

The MPEP § 2111 guidance does not authorize that the claim terms can take on any conceivable meaning the Examiner may create. The Examiner is limited such that the broadest reasonable interpretation of the claims is consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999).

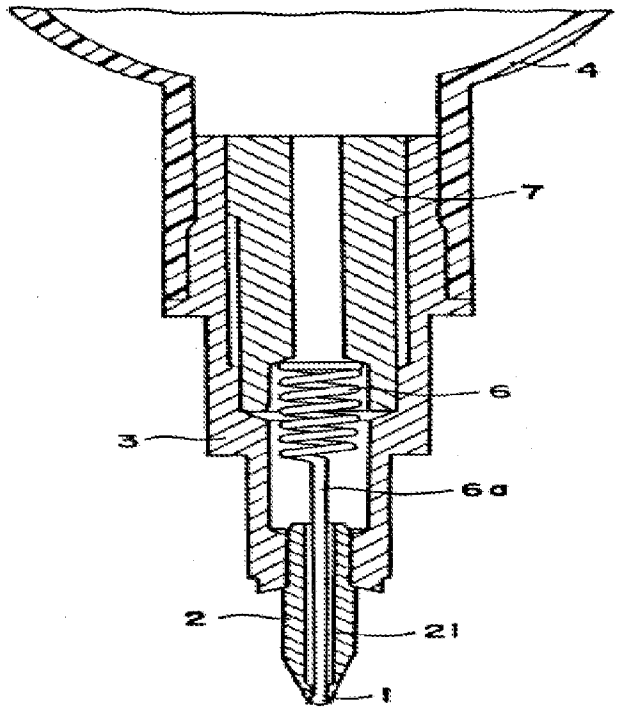
Properly interpreted, "capillary channel" does not read on element 21.

II. Further, the Examiner offers element 3 as the recited hole ("the hollow interior of element 3; see Fig. 3" at Official Action page 2, second to last line).

Claim 1 recites a hole within the tip, the hole connected to the capillary channel.

The hollow interior of element 3 does not satisfy the "hole" recitation.

FIG. 3



As can be readily seen from the figure, the hollow interior of element 3 is not part of the tip. The hollow interior of element 3 does not satisfy the recitation of "a hole (10) within the tip and connected to the capillary

channel;". Additionally, in the embodiment of Figure 3, the spring 6 therein is external to the tip 2. The spring, as recited in claim 1, must extend through the hole located within the tip.

Thus, the Figure 3 embodiment does not anticipate.

III. The recited "a narrow section of a locally radially decreased cross-section (7,7') within the capillary channel coming into contact with the straight portion (6r) of the spring (6), the narrow section (7, 7') preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis (N-N) of the ball-point pen (1)," is not anticipated.

The Examiner states that Okamoto discloses "a narrow section of a locally radially decreased cross-section within the capillary channel, coming into contact with the said straight portion (6a) of the spring (6)".

As seen in Figure 2, back hole 21 is not a capillary element (due to its large size does not provide any capillary action).

Only hole 23 could be the capillary element. Within hole 23 there is no "narrow section of a locally radially decreased cross-section".

Rather, in Okamoto the capillary hole 23 is always shown as cylindrical and of constant diameter.

In the claimed invention, it is this portion 23 that is made with 2 different diameters (as recited), so that it is finally very close to the spring straight portion, much closer than what is shown in Figure 2 of Okamoto. Okamoto does not disclose the recited capillary channel with two diameters (i.e., with a locally narrow section). Okamoto therefore does not anticipate.

In the Advisory Action, the Examiner acknowledges that the "Applicant is arguing that the 'capillary channel' must carry out a capillary effect, i.e. where the ink of the pen moves as a result of the forces of the surface tension of the ink and adhesion forces between the capillary channel and the ink. However, limitations in the claim are given their broadest reasonable interpretation. The term 'capillary' can be defined as 'having a very small bore' (Merriam-Webster online dictionary) or 'pertaining to or occurring in or as if in a tube or fine bore' (Dictionary.com). In other words, a 'capillary channel' could be a channel comprised of a very small or fine bore. Both Okamoto and Fukushima disclose elements that have a very small bore or pertain to fine bore, thus meeting the limitation of a 'capillary channel'."

The Examiner's analysis is incorrect. The Examiner interpretation of the "capillary channel" is inconsistent

with the interpretation that those skilled in the art would reach, having read the specification.

As a "back-up" position, the Examiner (in the Advisory Action) states that in Figure 2 of Okamoto, the space between the outer wall of fluid path 21 and stem 5a appears to be the amount of spacing as the space between the outer wall of bore 23 (i.e. the grooves 24) and the slightly thinner portion of the stem 5a. It is the Examiner's position that this portion of Okamoto (understood to mean fluid path 21) would use at least some sort of capillary effect to help the ink move through the capillary channels.

This is incorrect and unsupported. The dimensions within element 23, including the grooves 24, are clearly smaller than the dimensions of element 21.

Okamoto clearly does not disclose the recited capillary channel with two diameters (i.e., "a narrow section of a locally radially decreased cross-section (7,7') within the capillary channel coming into contact with the straight portion (6r) of the spring (6)". Okamoto therefore does not anticipate.

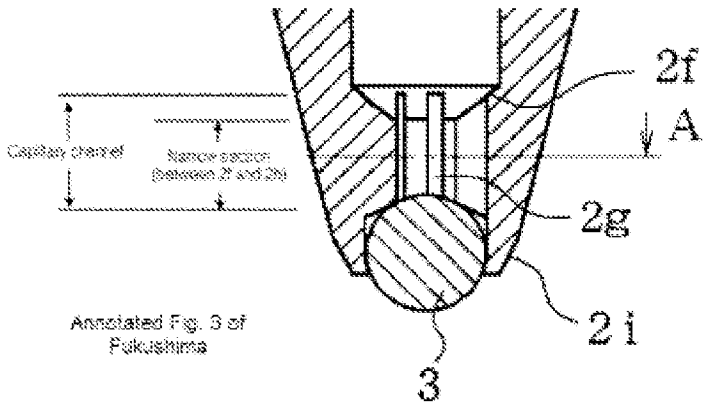
Reversal of this rejection is therefore solicited.

Arguments Concerning the Second Ground of Rejection

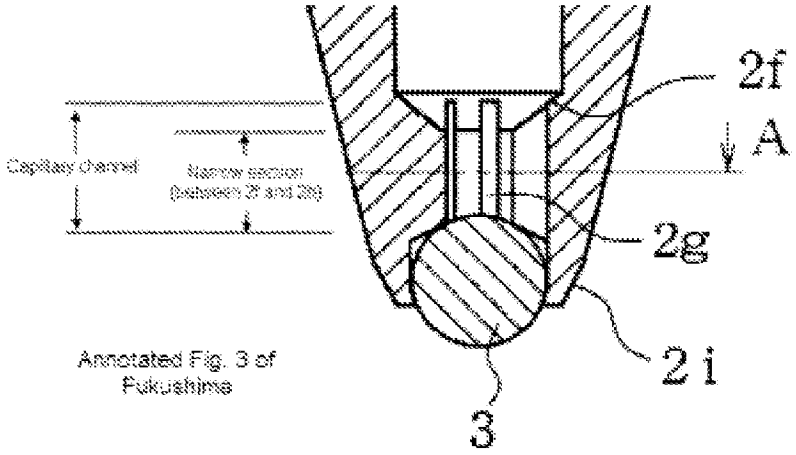
Claims 1, 4, and 8 are not anticipated by Fukushima.

The Examiner states (Official Action paragraph 5, beginning in the middle of page 4), that Fukushima discloses a ball-point pen comprising a tip (2); a capillary channel (2g between 2f and 2h) within the tip; a hole (the bore of tip 2) within the tip and connected to the capillary channel; a reservoir (5); a ball (3); a cavity with a retaining edge (2i); a compression-resilient spring (4) extending through the hole and terminating in a straight portion (4a) in contact with the ball.

Below is the rejection's annotated Figure 3 (from Official Action page 7).



The Examiner states that Fukushima discloses a narrow section of a locally radially decreased cross-section within the capillary channel, coming into contact with the said straight portion (4a) of the spring (4), the narrow section preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis of the ball-point pen (though not labeled with a reference number it is clear that capillary channel 2g has means, where the capillary channel narrows between 2f and 2h.

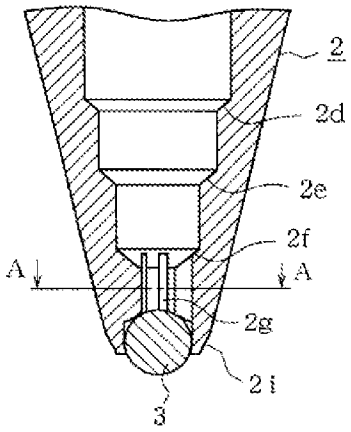


Annotated Fig. 3 of Fukushima

There is no "a narrow section locally radially decreased cross-section within the capillary channel". The annotated Figure 3 incorrectly identifies the capillary channel. In Fukushima, only the portion inside the capillary hole 2g has a diameter small enough so that there is a capillary effect.

If there is no capillary effect, the element cannot be said to be a capillary channel.

F I G. 3



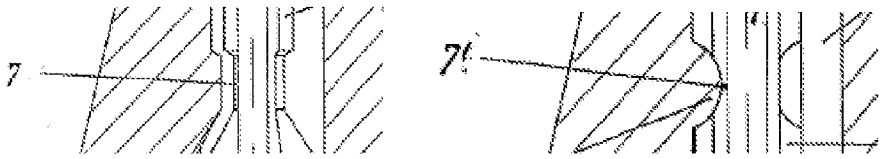
Fukushima's Figure 3 clearly show 2d, 2e, 2f, that are part of the back hole, without any capillary effect, which means that they are too big to create whatever capillary effect. Elements 2d, 2e, and 2f cannot satisfy the capillary channel recitation.

More specifically, element 2f is not a part of the capillary hole. Rather, element 2f is the final part of the back hole, being too big to have the capillary effect.

Indeed, in the Advisory Action, the Examiner states that "it is clear that the the narrow portion (2g) of Fukushima would contain the straight portion (of the spring) in an appoximately complementary manner with a minimum amount of play as required by claim 1."

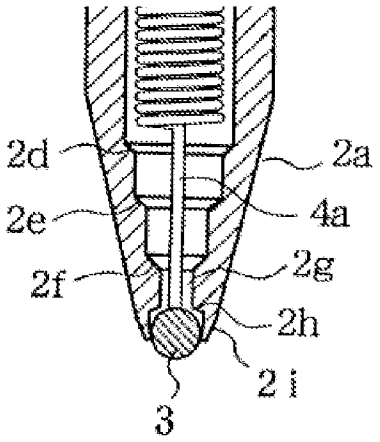
Thus, there seems to be no disagreement that only element 2g (ink passage 2g) would satisfy the recited capillary channel. However, within element 2g (the capillary channel) there is no narrow section locally radially decreased cross-section as required by claim 1.

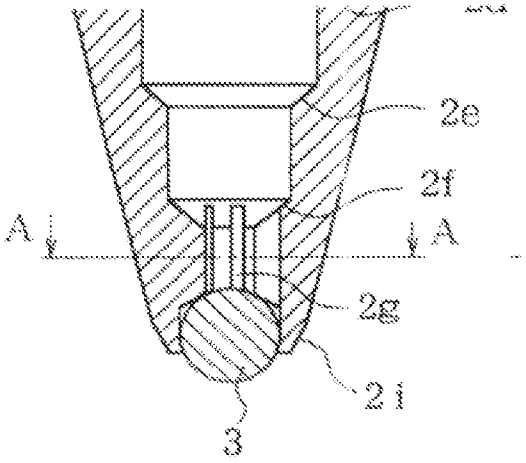
Contrast Fukushima with the below excerpt from Figures 2-3 of the present application.



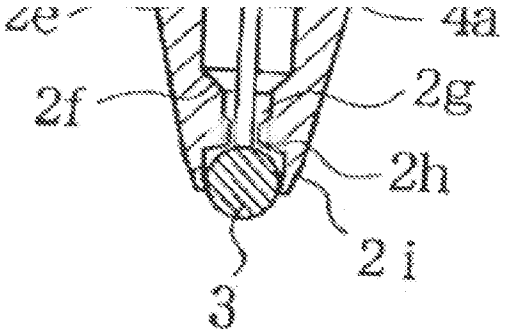
The present claims recites a narrow section of a locally radially decreased cross-section (7,7') within the capillary channel coming into contact with the straight portion (6r) of the spring (6), the narrow section (7, 7') preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis (N-N) of the ball-point pen (1).

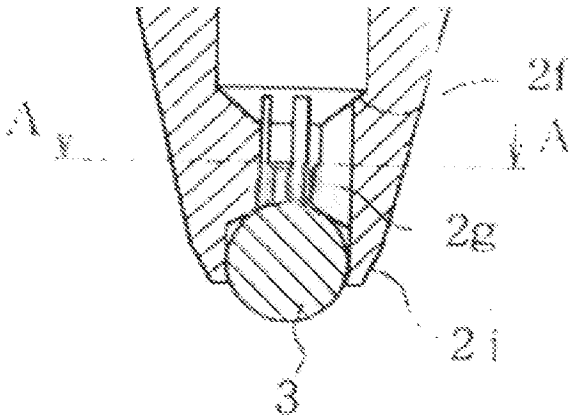
This is not the case in Fukushima. A portion of each of Fukushima Figures 2-3 is reproduced below.





Below are annotated versions of Fukushima Figures 2-3 showing a locally radially decreased cross-section within the capillary channel adjacent straight portion of the spring.





In the first set above, capillary hole diameter 2g is clearly much bigger than the spring straight portion 4a,

so that the spring can radially move inside the capillary hole 2g. Even if this is not the case, there is no locally radially decreased cross-section in Fukushima element 2g. Rather, the diameter is constant along the entire length of element 2g. Compare Figures 2-3 to annotated Figures 2-3.

Thus, Fukushima does not anticipate "a narrow section of a locally radially decreased cross-section (7,7') within the capillary channel coming into contact with the straight portion (6r) of the spring (6), the narrow section (7, 7') preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis (N-N) of the ball-point pen (1)".

Reversal of this rejection is therefore solicited.

Conclusion

In conclusion, since the Okamoto and Fukushima references each have a capillary channel having a only a single, constant diameter, neither reference teaches a capillary channel within the tip, that capillary channel having a narrow section of a locally radially decreased cross-section coming into contact with the straight portion of the spring and thereby preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis of the ball-point pen.

The two-diameter capillary channel is neither taught nor suggested by either Okamoto or Fukushima.

The Appellants have demonstrated that the Examiner has failed to show that the rejected claims are anticipated. Thus, favorable reconsideration and reversal of the Examiner's rejections, by the Honorable Board of Patent Appeals and Interferences, are respectfully solicited.

The requisite Appeal Brief fee in the amount of $540 is being paid online simultaneously herewith by credit card.

Respectfully submitted,

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REL/msd

(viii) **Claims Appendix**

1. (previously presented) A ball-point pen (1,11) comprising:

a tip (4);

a capillary channel (3) within the tip;

a hole (10) within the tip and connected to the capillary channel;

a reservoir (2) communicating with the hole (10) connected to the capillary channel (3) of the tip (4);

a ball (5) for writing, the ball located with the tip;

a cavity (9) which seats the ball (5) for writing, the cavity having a retaining edge (9t);

a compression-resilient spring (6) extending through the hole and terminating in a straight portion (6r), which straight portion is aligned with the longitudinal axis (N-N) of the ball-point pen (1), the straight portion having a free end (6p) in contact with the ball (5),

the ball (5) kept pressed against the retaining edge (9t) of the cavity (9) as a result of the thrust of a compression-resilient spring (6);

a narrow section of a locally radially decreased cross-section (7,7') within the capillary channel coming into contact with the straight portion (6r) of the spring (6), the narrow section (7, 7') preventing the straight portion of the spring from becoming inclined with respect to the longitudinal axis (N-N) of the ball-point pen (1),

the narrow section (7,7') which, being passed through in the axial direction by the straight portion (6r) of the spring (6), is dimensioned such as to contain said straight portion in an approximately complementary manner with a minimum amount of play, substantially preventing said straight portion from assuming inclined positions with respect to the longitudinal axis (N-N),

wherein said straight portion (6r) consists of only a single straight portion extending from a distalmost end in contact with the ball (5) towards a coiled portion (6) of the spring, the entire single straight portion being located on the longitudinal axis (N-N) of the ball-point pen (1); and

a radial through-groove (8i) connecting the cavity seating the ball to hole, the radial through-groove being outside the narrow section (7,7') containing the straight portion.

2-3. (cancelled)

4. (previously presented) Ball-point pen according to claim 1, in which the narrow section is formed by a cylindrical shaped restriction (7).

5. (Withdrawn) Ball-point pen according to claim 1, in which the narrow section is defined by a ring (12) with a semi-circular cross section projecting towards the inside of the capillary channel (3) having its axis coinciding with the longitudinal axis (N-N) of the ball-point pen (1).

6. (cancelled).

7. (cancelled).

8. (previously presented) Ball-point pen according to claim 1, wherein a cross section through the narrow section (7,7') on a plane perpendicular to the longitudinal axis (N-N) defines a circular opening surrounding said straight portion (6r).

(ix) **Evidence Appendix**

None.

(x) **Related Proceedings Appendix**

None.